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June 2, 2014

Michelle Mullin, Project Manager U.S. Environmental Protection Agency - Region 10 1200 Sixth Avenue, Suite 900, OCE-084 Seattle, WA 98101

Re: Rainier Commons, LLC - Old Rainier Brewery Exterior Paint Abatement

Supplement to Phase I Individual Phased Work Plan (IPWP)

Dear Ms. Mullin:

EPA approved the Rainier Commons application for risk based approval of its Work Plan for Exterior Paint Removal by way of its conditional approval dated December 18, 2013. Rainier Commons submitted its Individual Phased Work Plan for the Phase I Work, on April 3, 2014 satisfying the conditions in the formal approval and additional requirements and supplements requested by EPA. After reviewing the IPWP for Phase I Work, EPA followed up with Rainier Commons on various questions that were answered and then May 15, 2014 EPA issued a list of 34 items requiring clarification, which were addressed on a preliminary basis in a phone conference on May 16, 2014. This correspondence additionally responds to those 34 items, at EPA's request. This letter and its attachments are a supplement to the Work Plan and the IPWP for Phase I.

1. King County wants SD-1 and CB-5 sampled and analyzed as well as the three locations you identified. You mentioned in our call on 2/11/14 that those may not have sediment, or may be covered by the containment structure. If so, you planned to note that in the report. The Phase I IPWP did not reflect any of this conversation. You must include these locations in the sampling plan.

These locations were not additionally referenced in the IPWP as Rainier Commons believed they had been removed from the sampling plan by agreement in the 2/11/14 conference call with EPA for the practical reasons discussed. Rainier Commons has confirmed with EPA that the SD-1 trench drain is covered by the containment on the east side of Building 13. CB-5 next to Building 11 similarly will be blocked or partially blocked by the containment. Any portion of these drains that is not full covered by the containment will be covered and sealed

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with an impermeable material, during the hours of blasting work. In addition, those locations feed into the locations that are being sampled. Thus, any sediment or aqueous solution that is contained in the SD-1 trench drain and CB-5 areas would be reflected or represented in the samples collected from the Sample 1 and Sample 3 locations, in all events.

2. The King County discharge authorization is 0.1 micrograms per Liter (ug/L). Therefore, the action level for PCBs in water is 0.1 ug/L. This is stated in the RBDA. Both the General Workplan, the Phase I IPWP and a recent email from RC/NVL all continue to use 1ppm as the action level. 1 ppm (or 1 mg/kg) is the action level for PCBs in sediments. 0.1 ug/L is the action level for PCBs in water. Laboratory detection limits/reporting limits must be adequate for both of these levels.

Understood, for all purposes of the Work Plan and the IPWP, a concentration of PCBs in aqueous samples, in excess of 0.1 ug/L would be the action level. All references to aqueous samples from catch basins are considered by Rainier Commons to be amended to reflect the 0.1 ug/L as the maximum concentration level for PCBs in water and if exceeded will trigger additional action.

3. The RBDA only approved the use of blasting material identified in the General Workplan, which did not include copper slag or chemical strippers. At this time, neither of those materials are approved for abating the paint at the property. I understand that chemical strippers may be necessary for paint adhered to window frames, etc. Please send me information for the strippers you plan to use, including MSDS, application and disposal plans, and any other information that is necessary to determine the safety and environmental risk of using such a product. Copper slag is not approved for use at this time.

See product information sheets attached as a part of Exhibit 1 attached hereto. Any and all waste related to the chemical stripping required for metal substrates, such as window frames, which may include but not be limited to wipe rags, paper or other material used to cover the stripper while curing, and the stripper itself, will be drummed and labeled for disposal to be characterized and directed to the appropriate waste facility by the waste disposal sub-contractor at the end of the Phase I work, according to all applicable regulations.

4. You have provided an inventory of the inlets in the form of a map. On the 2/11/14 call I also requested a table that listed each inlet, it's feature attributes and lat/long coordinates. Please provide this table.

Rainier Commons provided a table of the inlets at issue in the Phase I Work with the IPWP. Rainier Commons does not have the latitude and longitude position of each of its inlets to the sanitary sewer. Rainier Commons is generally located at 3100 Airport Way South, Seattle, Washington 98134. A table of inputs previously developed by CDM is also included here as Exhibit 2.

5. The QA is still inadequate. I do note that you did include more specifics regarding duplicate and lab QA samples. And you did include the RPD required to accept the duplicate results. However, you did not include any parameters for how you will determine when to use or reject the sample results in general- such as what level of completeness is acceptable? You did not list the Reporting Limits for the analysis. I do not know if the analysis will be sensitive enough to detect contamination at the action levels. You mentioned the volume needed for your samples, but not for the QA samples. Do you need to collect extra volume for the lab-run MS/MSD, for example? You did not include any sampling QA such as equipment blanks or rinsate blanks.

See NVL supplemental responses as follows:

Parameters for how you will determine when to use or reject the sample results in general – such as what level of completeness is acceptable.

The decision to use or reject sample results is based on the surrogate recovery to determine if an extraction is complete. The exact parameters are set using a control chart based on previous sampling results. In general, the parameters are typically between 50 to 150 percent. Also, the matrix spike needs to be within the control charted levels, which is typically 65 to 135 percent.

You did not list the Reporting Limits for the analysis.

Liquid 0.1 ug/L Soil 0.1 mg/Kg

I do not know if the analysis will be sensitive enough to detect contamination at the action levels.

The Reporting Limits for Aroclors = 0.1 ug/L (Liquid) which is the same as the King County Screening Limit = 0.1 ug/L.

You mentioned the volume needed for your samples, but not the QA samples.

Three times the sample volume, for example, if the sample volume collected is one liter, three liters need to be collected for the matrix spike.

Do you need to collect extra volume for the lab run MS/MSD, for example?

Yes. As referenced above, three times the sample volume, for example, if the sample volume collected is one liter, three liters need to be collected for the matrix spike.

You did not include any sampling QA such as equipment blanks or rinsate blanks?

Due to cost and to avoid the potential for any cross contamination, collection device equipment will be disposable, where possible, and/or sufficient quantity of, for example, trowels will be present for the sampling round to facilitate clean scoops for each sample for that sampling round. As a result, there are no rinsate blanks to be collected.

6. What if your sediment scoops include a lot of water? Recommend putting into a container, letting settle, then decanting.

Agreed, Rainier Commons will generally follow the procedure set forth by King County in Section 3.1 at page 7 of its East Waterway Source Tracing in King County Combined Sewer System Sampling and Analysis Plan document. Overlying water collected with the sediment will be allowed to decant from the sample container and be returned to the sewer line.

7. Inlets under the containment structure need to be separately wrapped/protected (CB-5 according to scaffold drawings). You did mention completely sealing some of the manholes, I just want to ensure that any inlet under the structure is also separately sealed.

Agreed and understood if fully under the containment structure. If partially under, portions not fully under will be sealed during blasting hours, but may be uncovered during non-blasting periods to prevent excessive ponding of any storm water on site, if precipitation levels warrant.

8. Pre-blasting you mentioned that you would inspect all of the filter fabric and clean or replace them if necessary. Not mentioned specifically in the IPWP, though you do mention the ongoing inspection and cleaning. I just want to be clear that you will do a specific inspection to ensure all filters in place are intact and clean.

Yes that was the intent of the statement in the IPWP. A special pre-Work inspection will be performed and any and all maintenance will be carried out at that time, in addition to the regular maintenance schedule.

9. You mention appropriate decon of tools for sampling the substrate, but I don't recall seeing that for the sediment and aqueous samples as well. Please ensure that all sampling equipment is either disposed between uses or provide decon plans.

Due to cost and to avoid the potential for any cross contamination, collection device equipment will be disposable, where possible, and/or sufficient quantity of, for example, trowels will be present for the sampling round to facilitate clean scoops for each sample for that sampling round. Decontamination of any sampling equipment that is not disposable will follow the general procedure and protocol outlined in the concrete substrate sampling plan.

10. Aqueous sampling plan- I would like to see in the schedule a plan to use the weather forecast to plan the sampling event. You should attempt to collect catch basin samples during or immediately following rain events, as practicable. I understand this may not always be feasible, which is why documenting the weather forecast will be helpful.

Understood, Rainier Commons will make best efforts to comply with the recommendation regarding timing of collection of aqueous samples as outlined in item 10 above, and it will consult the NOAA weather forecast for the Seattle area (<a href="http://www.wrh.noaa.gov/sew/">http://www.wrh.noaa.gov/sew/</a>) and/or other credible weather news source to assist in planning for collection of adequate aqueous sampling, before each round.

11. The workplan mentions that wet wiping will occur on the substrate prior to visual inspection- what will be the "wet" material, water?

See CGI clarification at Exhibit 1 attached hereto. The substrate will be brushed and HEPA vacuumed.

12. Workplan mentions storing equipment, and disposal materials, but does not explicitly state in accordance with 761 storage requirements at 65(b) or (c). Must ensure compliance with 761, as stated in the RBDA. Also, the staging area is described, but where will the full containers be stored?

See CGI clarification at Exhibit 1 including recognition of adherence to PCB regulations. It is understood that Rainier Commons and its contractors will adhere to all applicable PCB rules and regulations in the conduct of all aspects of the Work.

13. Backflow protection needs to be installed on water sources used for the showers, etc. to prevent contamination.

See Exhibit 1 confirming backflow prevention check valve to be installed on water sources as requested.

14. What is the total height of the scaffolding? Will it be installed applicable to OSHA/WISHA and manufacturers standards? Include a statement as such.

See CGI clarification at Exhibit 1 confirming compliance with all applicable regulations and standards including WISHA.

15. How will water collection effectively work in the containment area? It will be trapped on the plastic sheeting within the straw waddle berm, but then what?

Water used in the containment should be minimal, primarily for workers personal wash. If any water escapes the initial area, and it should not, it will be contained within the bathtub type lip of the base of the containment and shop vacuumed up and drummed immediately. If any water manages to escape the layers of structured containment, a secondary barrier of straw waddle will trap and adsorb any such water. In addition, absorbent spill kit materials will be kept on hand to immediately trap and absorb any water that is not trapped within the impermeable container or "bathtub" style flooring of the containment.

16. Have you considered having a wearing surface on top of the plastic sheeting on the ground, to prevent punctures and tears? Such as planks of wood or aluminum?

Yes. See the description in the CGI supplement attached at Exhibit 1 hereto regarding sacrificial, replaceable wear layers among other layers for containment.

17. How will the plastic sheets be sealed between the building and the scaffolding? Example photos show tape, drawing shows caulk- what is the plan?

Caulk or foam sealant will be used in most, if not all instances. See CGI supplement at Exhibit 1.

18. Numbers and units seem to be off in the calculation on airflow.

See CGI clarification at Exhibit 1.

19. Will need to ensure that spent blasting media and waste are also sampled to comply with WA Dangerous waste rules.

Yes. All waste will be appropriately characterized prior to designation for waste disposal facility including compliance with Washington State Dangerous Waste rules and regulations to the extent that those rules and requirements may determine the correct facility to which any and all waste, including, but not limited to dry blasting media waste, personal protection equipment and containment enclosure material, wet waste and/or water or liquid waste.

20. Demonstration project showed that sand was very aggressive to the substrate, and soda was not effective. Walnut shells were best, but aren't mentioned in the IPWP.

The IPWP incorporates the Work Plan by reference and all three media are referenced and considered viable options. The contractor will need the flexibility to make a field judgment call to change the blasting media as the work progresses according to results being achieved. Therefore, the contractor should not be constrained to any one particular blasting media and additives like copper slag or other similar blasting abrasive additives commonly used in this type of paint abatement work is reserved where industry standards would commonly utilize such additives. Product information for sample copper slag as an abrasive or as an additive are submitted herewith. If Rainier Commons is to achieve the goal of complete paint removal all viable blasting media commonly accepted in the industry should be considered available for approval if the need for an alternative presents itself in the field to achieve that goal. Rainier Commons requests EPA project manager approval for the copper slag product as an approved blasting media as attached on Exhibit 1. CGI was not the contractor on the pilot project and is an experienced paint remediation contractor. CGI currently believes the proposed product is the best candidate to achieve remediation goals while being protective of the building to the greatest extent possible. CGI explained, in the May 16, 2014 conference, that the copper slag has the ability to bite and tear the surface of the paint at a superior level with low dust creation, which are both desirable characteristics for the Work.

21. May want to use Aluminum planks instead of wood, to prevent PCBs from contaminating the wood. Otherwise will need to decon and sample to ensure they are not contaminated.

CGI is planning to utilize steel and/or aluminum planking. See Exhibit 1.

22. What is the waste sampling and analysis plan?

CGI is subcontracting the waste profiling and disposal work to Kleen Environment and all applicable rules and regulations will be adhered to for each type of waste, including but not limited to dry blasting media, personal protection and containment material, wet waste and water and/or liquid waste. See Exhibit 1. Rainier Commons understands that incineration may be required as to some of

this remediation waste. Rainier Commons reserves the right to appropriately characterize and dispose of any and all remediation waste that may qualify for disposal other than by incineration as may be allowed under all applicable rules and regulations.

23. Waste containers also need the date out of service for PCB waste.

Understood, Rainier Commons will follow the requirements outlined in EPA email of May 21, 2014, in follow up to the May 16, 2014 conference on this subject referencing among other regulations 761.65.(a)(1) and 761.65(c)(9). The contractor will include the date the PCB waste was removed from service, which means removed from the building, on each drum. The earliest date that PCB waste is removed from service and the drum is started to be filled will be the date placed upon the label for the out of service date.

24. CGI Workplan states "hazardous material"- this needs to be clearly "PCB wastes regulated for disposal or wastes that designate as dangerous waste pursuant to WAC 173-303"

Understood, this will be followed.

25. Where are you sending the collected waste water? Can't go to a landfill.

See item 22 above. Rainier Commons understands that PCB contaminated liquid waste may require disposal by incineration, unless cost of disposal and volume of waste justifies disposal contractor to set up filtration and treatment on site prior to disposal, which is not currently under consideration, but due to high cost of waste handling and disposal, Rainier Commons reserves the right to make any and all appropriate waste disposal arrangements that are available to it under all applicable laws and regulations, when the Phase I Work is complete and actual volumes of each category of waste are known, in consultation with the qualified waste disposal contractor.

26. Air monitoring- what is the sampling and QA plan? What are the MDL/RL?

The air sampling plan is to follow NIOSH Method 5503, attached hereto as Exhibit 3.

Per this method, with a 100 Liter air volume, the

RL = 0.01 mg/m3 or 10 ug/m3MDL = 0.005 mg/m3 or 5 ug/m3 27. All field personnel must be aware of the RBDA.

Understood, they will be so informed at preconstruction meeting and as necessary throughout the Work.

28. Spill plan does not have any mention of 761 Subpart G- Spill Cleanup Policy. All PCB spills or releases must be cleaned up in accordance with that part of the regulations.

Understood, see supplement to CGI site specific work plan at Exhibit 1 attached.

29. HASP is not site specific, and only applies to CGI- what site specific health and safety plan procedures will be implemented to cover all the work being conducted by all parties?

See additional NVL HASP included here at Exhibit 4. To the extent that any person enters the containment they will adhere to the CGI HASP. Rainier Commons personnel that continue to conduct regular source control tasks such as filter sock replacement, hand collection of paint chips, vacuuming of paint chips or other site debris will continue to wear protective gloves and mask. Any additional source control tasks, which may include additional rounds of visual inspection of filter socks and visual inspection of the exterior condition of the containment and grounds adjacent to the containment while the blasting work is on-going, but that is outside of the contractor's established work area and does not require any physical contact with paint chips, will not require special personal protection.

30. In the Containment section drawing- what is the "4x4 cant"?

It is a rigid strip of building material installed at the base perimeter of the containment to provide the outside edge of the containment structure, rigidity and additional puncture protection.

31. NVL roof drain protection includes RD41 on Building 13, and RD 43 on Building 23 and RD45, 46 on Building 10 and 11. CGI plan does not include these. Ensure that all on the NVL plan are protected according to NVL's specs prior to work.

Understood, Rainier Commons will appropriately protect with filter sock at roof level or divert storm water and filter before entry into storm/sewer system. See Exhibit 5 attached.

32. Backup generator or power source to maintain neg pressure in the event of a power outage?

This was discussed and determined to not be required at the in person meeting with EPA in January due to the layered nature of the containment, the additional cost of providing this type of back-up power in a site ready status and the low likelihood of needing this type of back-up power.

33. What is the substrate on the west elevations of Bld 10 and 11? Pictures look like concrete, with stone near bottom. Was stone previously demonstrated to be PCB free?

The concrete portions at the base of the building, the stairs and landing, are not painted. The stone appears to be a form of brick. The PCBs in the dried applied paint at Rainier Commons have already been shown not to migrate to porous stone or cementitious like substrates, through substrate sampling, and specifically to be at or below 1 ppm in brick and cementitious plaster substrates. If, when the paint is removed from buildings 10 and 11, the brick-like substrate appears to be different enough from the brick and cementitious plaster substrates already demonstrated to be clear of PCB migration, then at EPA's request Rainier Commons will sample that substrate as well, with three substrate samples, generally following the sampling plan and SOP referenced therein for the concrete substrate submitted with the IPWP.

34. In the Visual Inspection addendum there is a note that the "infrequent small fleck of paint remaining post abatement is functionally unavoidable as a practical matter. Complete removal and completely clean to visual inspection will be required of the Contractor". I want to re-iterate that complete removal and completely clean is required. The statement "functionally unavoidable as a practical matter" is not a statement that EPA agreed to, and is not how the RBDA is written.

Understood, Rainier Commons is committed to making best efforts to carry out the Work Plan to the fullest extent practicable such that the substrate does not pose an unreasonable risk to human health or the environment at the completion of the Work.

We look forward to EPA's final approval of the Phase I IPWP. If you have questions please contact our office or Rainier Common's Project Manager.

Very truly yours,

RYAN, SWANSON & CLEVELAND, PLLC

Jo M. Flannery

Attorney Of Counsel

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# Enclosures

cc: Client

Alex Fidis, EPA Regional Counsel (via electronic copy with enclosures)

Mark Marcell, CGI (via electronic copy with enclosures)
Dave Leonard, NVL (via electronic copy with enclosures)

# SUPPLEMENTAL AMENDMENTS TO RAINIER COMMONS SITE SPECIFIC EXTERIOR PAINT ABATEMENTWORK & SAFETY PLAN

## 3. COPPER SLAG AND GREEN DIAMOND SAND

See attached Data Sheets for these products.

## 11. PCB PAINT REMOVAL

Correction to the cleaning process; Prior to inspection by NVL/EPA, "all surfaces shall be brushed and HEPA Vacuumed clean".

## 13. BACKFLOW PREVENTION

Water source used inside containment shall be equipped with a back-flow preventer check valve assembly.

#### 14. SCAFFOLDING

Scaffolding erectors shall have proper certification by LNI. CGI and there subcontractor shall erect the scaffolding in compliance with WISHA and manufactures recommendations.

## 15. CONTAINMENT ENCLOSURE

Prior to scaffolding erection, CGI will install 1-layer of reinforced 6 mil poly, 2-layers of cardboard and 1-layer of 10-mil shrink-wrap on the ground. Scaffolding pads will then be placed at each base frame to ensure no floor puncturing. During the work, CGI will use a 6-mil poly drop to catch most of the debris and protect main layers of base floor containment. This shall be changed out periodically or as necessary to ensure no breech in containment.

17. Urethane caulking or foam will be used as necessary to seal poly containment to building and base systems.

## 18. NEGATIVE AIR MACHINES

2,200 CFM negative air machines (NAM's) will be utilized to create a negative pressure environment within the NPE, which will be monitored by a manometer adjacent to the P/MDU. The NAM calculations are as follows:

At least 1 NAM + 1 back-up NAM will be installed in each section of the scaffold enclosures. The NAM calculations are based on the entire scaffold enclosure volume as follows:

333 LF X 38' Average Height X 3.5' width = 44,289 FT<sup>3</sup>
44,289 FT<sup>3</sup> X 4 air changes/hr = 177,156 FT<sup>3</sup>
177,156 FT<sup>3</sup> / 60 minutes = 185 CFM
2,953 CFM / 1,540 CFM (2,200 @ 70% efficiency) = 1.9 NAM's
CGI will use 4-units / work area or more if necessary.

# 21. SCAFFOLD PLANKING

CGI's intent is to use steel and aluminum planking systems for our work.

# 22. DISPOSAL PLAN

CGI has contracted with Kleen Environmental to profile all waste generated within the containment. With the caveat that if tests more favorably than schedule D facility we'll dispose pursuant to all applicable regulations.

# 28. SPILL RESPONSE

CGI acknowledges 761 Subpart G - Spill Cleanup Policy.

Copper Slag MSDS Page 1 of 3

COPPERSLAG MSD	os .	
	Product Name	Copper Slag
Product and Company Identification	No	GSR - SDS 005
	Manufacturer Information	Manufacturer's Name PT. Smelting Gresik Smelter and Refinery Address Desa Roomo, Kecamatan Manyar PO. Box 555 Gresik 61151 Jawa Timur - Indonesia Telephone Number : 62-31-397-6458/59 Fax Number : 62-31-397-6460
	Chemical formula	FeO-SiO <sub>2</sub> -Al <sub>2</sub> O <sub>3</sub> -CaO
Composition/ Information on Ingredients	Element and Content	FeO: 45 ~ 55 % SiO <sub>2</sub> : 30 ~ 38 % CaO: 3 ~ 7 % Al <sub>2</sub> O <sub>3</sub> : 1 ~ 5 %
	CAS No	-
Hazard Identification	Non hazardous material	
	Inhalation	None
First Aid Measures	Eye Contact	Rinse thoroughly with water. Seek medical attention for abrasion
	Skin Contact	Wash with soap and water
	Ingestion	Seek medical attention for discomfort
	Flash point and method	None
Fire Fighting Measures	Flammable Limits	Not Combustible
	Fire fighting equipment	This product is not a fire hazard
Accidental Release	Land Spill	Clean up spilled material
Measures	Water Spill	Clean up spilled material
Handling and Storage	Handling	It is safe to handle copper slag, however recommended to use personal protection
	Storage	Open stock yard

	Evenous Controls	T		
	Exposure Controls			
	Personal Protection			
Exposure Controls / Personal Protection	Respirator Protection	Under ordinary condition no respiratory protection is required. Wear respirator/dust mask when exposed to dust above exposure limits		
	Eye Protection	Wear glasses or safety goggles to prevent contact with eyes		
	Skin Protection	Use gloves, shoes and protective clothing to prevent skin contact		
	Physical State	Solid		
	Color	Grainy		
	Odor	Odorless		
	Boiling point	-		
Physical And Chemical Properties	Melting point	around 1200° C		
	Specific gravity			
	• True	3.5-3.7		
	Apparent	1.0-2.1		
	Solubility in Water	-		
	General	Product is stable		
	Dust explosion	None		
Stability and Reactivity	Ignition (reactivity of spontaneous ignition and water)	None		
	Oxidize ability	None		
	Combustibility	None		
Toxicological Information	Skin corrosiveness	No		
		No		

	Acute Toxicity (including lethal dose 50)	No
	Sub-acute toxicity	No
	Chronic toxicity	No
	Cancer field	No
	Mutation field (microorganism 8 abnormal chromosome)	<sup>L</sup> No
	Genital Toxicity	No
	Decomposition	There is no problem
Ecological Information	Accumulation	There is no problem
	Fish toxicity	There is no problem
Disposal Considerations	Dispose in landfill in accordance in compliance with local regulation	with all applicable regulation. Any disposal practice must be ons
Transport Information	-	
Regulatory Information		
Other Information	Abbreviation CAS No	Chemical Abstract Service Number

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# Green Diamond Sand Products Abrasives Spec Sheet

Green Diamond Abrasives is fused magnesium ortho silicate, formed from molten lateritic ore and granulated by quenching. The quenching process produces and amorphous non-crystalline form of hard durable granule. Green Diamond Sand is non metallic and chemically inert.

Green Diamond Abrasives are manufactured in the U.S.A.

Materials Properties
Shape: Angular to Sub Angular
Hardness: 7 on the Mohs hardness scale

Color: Green to Gray Specific Gravity: 3.3

Bulk Density: 85 to 105 lb. Per Cu. Ft.

Certifications: QPL Mil 22262 b (SH), CARB Title 17,

AASHTO (T104-90-T12-87)

Contains no free silica

Product Specifications: See spec sheets also custom blending available

Packaging: Jumbo bags, 100 and 50 lb. paper bags

Bulk: Rail covered hoppers and trucks pneumatic or container type

Typical Analysis

Silicon Dioxide 50.9

Magnesium Oxide 32.8

Iron Oxide

11.7

Aluminum Oxide

1.2

Environmental: *Green Diamond Abrasives* meet the TCLP (40 CFR 261.24a) Criteria prior to its use.

Green Diamond Abrasives contain no heavy metals exceeding the levels of the TCLP.



# MATERIAL SAFETY DATA SHEET

ABRASIVE PRODUCTS

(1636, 2050, 3060)

<b>SECTION I - PRODUCT</b>	IDENTIFICATION	HMIS
Manufacturer's Name:	Green Diamond Sand Products	Health - O
Telephone:	(541) 874-3111	Flammability - O
Address:	PO Box D, Riddle, OR 97469	Reactivity - O
Date Prepared:	August 1, 2013	Protective Gear - K

<b>SECTION II - HAZARDO</b>	OUS INGREDIEN	TS/IDENTITY	INFORMATION
Hazardous Components		,	
(Specific Chemical ID -			
Common Names)	CAS No.	ACGIH TLV	OSHA PEL
SiO <sub>2</sub> (Silicates)	112926-00-8	10 mg/m3	10 mg/m3
MgO (Magnesium Oxide)	1309-48-4	10 mg/m3	10 mg/m3
Fe <sub>2</sub> O <sub>3</sub> (Iron Oxide)	1309-37-1	10 mg/m3*	10 mg/m3
Al <sub>2</sub> O <sub>3</sub> (Aluminum Oxide)	1344-28-1	10 mg/m3	10 mg/m3
CaO (Calcium Oxide)	1305-78-8	2 mg/m3	5 mg/m3
Ni (Nickel)	7440-02-0	1 mg/m3	1 mg/m3
Cr <sub>2</sub> O <sub>3</sub> (Chromium Oxide)	1308-38-9	10 mg/m3*	15 mg/m3*
	*Regulated as for nuisa	nce particulate (dust).	
TYPICAL ANALYSIS:			
SiO <sub>2</sub>		50.2%	
MgO		31.4%	All SiO <sub>2</sub> reported in Green Diamond
Fe <sub>2</sub> O <sub>3</sub>		15.9%	materials is in the form of silicates and contains <b>no</b> crystalline silica.
$AI_2O_3$		1.6%	Crystalline silica is the only form of
CaO		0.7%	silica suspected of being
Ni + NiO		<.1%	carcinogenic.
Cr <sub>2</sub> O <sub>3</sub>		.1%	
Trace Elements & Compounds (to	tal)	1.5%	
TOTAL		99.8%	
SECTION 313 SUPPLIER NOTI	FICATION		
This product contains the following		to the reporting requi	rements of section 313
of the Emergency Planning and Co			
	- 10 (a. €)	16.	***
CAS#	Chemical Name	Percent by Wei	ght
7440-02-0	Nickel	<.1%	
This information should be include	d in all MSDSs that are o	opied and distributed	for this material.

SECTION III - PHYSICAL/CHEMICAL	CHARACTERISTICS	
Boiling Point:	NA	
Vapor Pressure (mm Hg.):	NA	
Vapor Density (AIR = 1):	NA	
Specific Gravity (H2O = 1):	3.0	
Melting Point:	2,650 Deg. F	
Evaporation Rate:	NA	
Solubility in Water:	Not soluble in water	
Appearance and Odor:	Green, Gray granular, no odor	

LOSION HAZARD DATA	
NA	
NA	
NA	
None	
None	
	NA NA None

SECTION V - REACTIVITY DATA		
Stability:	Stable	
Conditions to Avoid:	None	
Incompatibility (materials to avoid):	None	
Hazardous Decomposition or By-Products:	None	
Hazardous Polymerization:	Will not occur	
Conditions to Avoid:	None	

SECTION VI - HEALTH	HAZARD DATA	
Route(s) of Entry:	Inhalation? Skin?	Yes No
	Ingestion?	No
Health Hazards (Acute & Chronic):		No specific health hazards; should avoid specified limits for compounds listed in Section II.
Carcinogenicity:	NTP? IARC Monographs?	No No
	OSHA Regulated?	Yes, control for compounds in Section II and for nuisance dust.
Sign & Symptoms of Exposure:		Typical of over exposure to nuisance dust.
Medical Conditions Generally Aggra by Exposure:	avated	Respiratory conditions.
Emergency & First Aid Procedures:		As relevant for over exposure to nuisance dust.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING & USE

Steps to be Taken in Case Material

is Released or Spilled:

Clean up with broom or vacuum.

Waste Disposal Method:

Follow federal, state, and local regulations

for disposal as in inert solid waste.

Precautions to be Taken in Handling & Storing:

No specific precautions.

Other Precautions:

None

SECTION VIII - CONTROL MEASURES

Respiratory Protection (Specify Type):

NIOSH/OSHA/MSHA approved particulate

filter respirator.

Ventilation:

Local Exhaust:

Yes Yes

Mechanical (General):

Use to meet TLV requirement if dust is

generated.

Special:

Other:

None None

Protective Gloves:

Yes, if handling.

Eve Protection:

Yes, safety glasses.

Other Protection.

Other Protective Clothing or Equipment:

Appropriate apparel.

Work/Hygienic Practices:

Use material for the purpose intended and incorporate methods of dust control that are effective in maintaining airborne dust

concentrations within the TLV.

# NOTICE

While the information included in this MSDS has been obtained from reliable sources, this information is furnished without any warranty (expressed or implied), representation, inducement, or license except that it is accurate to the best of Green Diamond Sand Products knowledge. This information is offered solely for your consideration, investigation, and verification. Any use of this information must be determined by the user to be in accordance with applicable federal, state, and local laws and regulations. Furthermore, the conditions or methods of handling, storage, use and disposal of the product are beyond the control and knowledge of Green Diamond Sand Products. Green Diamond Sand Products does not assume responsibility and expressly disclaim liability for any loss, damage, or expense arising out of or in any way connected with the handling, storage, use, or disposal of the product. Buyer assumes all risks in its use of the product.



# PRODUCT DATA SHEET

# Piranha 4

# Solvent Gel

## **Product Description**

5740

Piranha 4 is a biodegradable, solvent-based gel formulated to remove multiple coats of lead-based paint. This fast acting, lemon scented, formula starts removing most paints and stubborn coatings in less than one hour, without the use of dangerous chlorinated solvents, caustics or methylene chloride. Gel formulation yields maximum coverage per gallon and has excellent resistance to sagging, enabling it to cling to vertical and overhead surfaces. Piranha 4 has a very slow rate of evaporation keeping it active for hours. Piranha 4 is a unique solvent formulation ideally suited for paint removal from historically significant architectural components since it does not discolor or raise wood grain or require neutralization. Piranha 4 can be used on virtually any substrate to remove oil based paint, latex paint, elastomeric paint, cementitious asbestos paint, epoxy and urethane. Piranha 4 is ideal for use on substrate metals like copper that are reactive with caustic alkaline paint removers.

# **Application Information**

#### **SURFACE PREPARATION**

Warning! If you scrape, sand, or remove old paint from any surface, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH approved respirator to control lead exposure. Carefully clean up with a wet mop or HEPA vacuum. Before you start, find out how to protect yourself and your family by contacting the U.S. EPA/Lead Information Hotline at 1-800-424-LEAD (5323) or log on to www.epa.gov/lead.

Protect all surfaces not being stripped with polyethylene sheeting. For interior use, open windows and doors or use other means to assure a constant supply of fresh moving air during use. Ideal working temperature is between 65-85°F; not recommended when substrate temperature is below 60°F. Avoid direct sunlight.

#### **APPLICATION TOOLS**

Apply Piranha 4 with brush, roller or airless spray equipment.

Brush: Synthetic, nylon or polyester bristle

Roller: Synthetic fiber 3/8" nap or longer Spray: .019 to .021 tips

# PRODUCT APPLICATION

For best results, perform a test patch to determine the appropriate dwell time required to remove the existing paint system. The length of time required to remove a paint system is dependent on the application temperature, and the thickness and type of paint being stripped. If Piranha 4 is to be left for an extended period of time, cover with polyethylene sheeting.

Piranha 4 can be applied using a brush, roller or airless sprayer.

Be certain that all uneven or irregular surfaces receive adequate coverage. When Piranha 4 has penetrated to the substrate, scrape the softened paint residue.

Allow the surface to dry before lockdown of residual lead-based paint or dust with Lead Shield®. Contact Fiberlock Technologies for detailed application instructions.

#### COVERAGE

Smooth Surfaces: 125 ft²/gal. Porous Surfaces: 50-100 ft²/gal.

#### **CLEANUP**

Clean tools and drippings with warm soapy water. Collect all waste in a plastic bag or drum. Properly dispose of waste and wastewater in accordance with Local, State and Federal regulations. Keep container closed when not in use. If practical, filter wastewater in accordance with a federally or locally accepted method to minimize the amount of waste which must be disposed of as hazardous.

## **PRECAUTIONS**

Store in a dry place at temperatures between 40°F (4.5°C) and 90°F (32°C). Protective clothing should be worn. Wear rubber gloves. Wear eye protection at all times. Face and head protection should be worn when working at face level or overhead.

#### **FIRST AID**

EYE: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyes open. Get medical attention.

# Properties

#### **Product Specifications**

 Color:
 Blue

 Odor:
 Mild Solvent Odor

 Flash Point:
 >212°F

 pH:
 7.0-8.0

 Shelf Life:
 36 Months Min.

 (Original Sealed Container)

## Coverage

Smooth Surfaces: 125 ft²/gal
Porous Surfaces: 50-100 ft²/gal

#### Performance

Specific Gravity: 1.06 lbs/gal Activation Time: 30 minutes Minimum Activation Temp: 40°F

## Available Package Sizes

5 gallon containers
Weight Per Gallon ± .5 lb

Weight Per Gallon ± .5 lbs: 10.7 lbs/gal

# Piranha 4

Solvent Gel

5740

# **Application Information**

SKIN: Remove contaminated clothing and shoes. Flush skin with water. Follow by washing skin thoroughly with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

INGESTION: If ingested, DO NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs. Get medical attention.

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing.

SUPPLEMENT HEALTH INFORMATION: Overexposure may cause blurring vision.

# CAUTION! KEEP OUT OF REACH OF CHILDREN. FOR PROFESSIONAL APPLICATORS ONLY!

OVER EXPOSURE MAY CAUSE BLURRING OF VISION.
Do not take internally. Close container after each use.
Keep from freezing.
Store between 40°F (4.5°C) and 90°F (32°C)
24 hour Emergency "CHEM-TEL" - 1-800-255-3924

# For Technical Information call 800.342.3755

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use of this product are beyond our control. Neither Fiberlock Technologies, Inc., nor its agents shall be responsible for the use or results of use of this product or any injury, loss or damage, direct or consequential. We recommend that the prospective user determine the suitability of this product for each specific project and for the health and safety of personnel working in the area.

Piranha 4, the Piranha 4 Logo and other marks in this literature are trademarks of Fiberlock Technologies, Inc.

Fiberlock Technologies, Inc. • 150 Dascomb Rd • Andover, MA 01810 • www.fiberlock.com • 800.342.3755

# MATERIAL SAFETY DATA SHEET PIRANHA® 4

Per OSHA-recommended ANSI Z400.1-2004 standard format & in accordance with European standard format

#### **SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

Product Name: Piranha® 4

Product Description: Lemon Scented NMP Solvent Gel Paint Remover

Product Code: 5740

Manufacturer: Fiberlock Technologies, Inc.

Address

Fiberlock Technologies 150 Dascomb Road Andover MA, 01810 Contact Info:

Tel: (800) 342-3755 Fax: (978) 475-6205

Emergency Phone: 24 Hour Contact: CHEM-TEL: (800) 255-3924 (Contract Number: MIS0001450)

INTERNATIONAL 24 HOUR EMERGENCY Phone: 813-248-0585

# SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

#### Hazardous

Chemical Name	CAS#	Percent	OSHA PEL	ACGIH TLV
1 - N - Methyl-2- Pyrrolidone	872-50-4	45 - 50	Not Established	Not Established
2 - Dimethyl Adipate	627-93-0	40 - 45	Not Established	Not Established

This product contains N - Methyl-2- Pyrrolidone which is subject to reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains N - METHYL-2- PYRROLIDONE which is known to the state of California to cause reproductive harm

#### **SECTION 3: HAZARDS IDENTIFICATION**

#### Potential Health Hazards:

Inhalation health risks and symptoms of exposure: If mists or vapors are generated at high concentrations, may cause pallor, nausea, anesthetic or narcotic effects, blurred vision and irritation of the upper respiratory passages.

Skin and eye contact health risks and symptoms of exposure: Skin: This material may cause mild skin irritation. Prolonged or repeated contact may cause redness cracking and blistering of skin. Eye contact can cause irritation. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing, redness and blurred vision

Skin absorption health risks and symptoms of exposure: Due to low evaporation rate, components can be absorbed through skin causing numbness and blurred vision.

Ingestion health risks and symptoms of exposure: Ingestion can cause severe

Health hazards (chronic): N-Methyl-2-Pyrrolidone: a component of this product was reported to be fetotoxic and to increase the incidence of skeletal abnormalities when administered dermally to rats at a dose of 750 mg/kg during gestation (fund. and appl. tox 2: 73-6, 1982)

Carcinogenicity: NTP: No IARC Monographs: No OSHA Regulated: No

Medical conditions generally aggravated by exposure: NONE

# **SECTION 4: FIRST AID MEASURES**

Eyes: Flood with plenty of water with eye lids held open for at least 15 minutes and get medical attention promptly

Skin: Wash thoroughly with soap and water. Thoroughly launder contaminated clothing before reuse. If irritation and redness persists, see physician

Ingestion: Keep person warm and quiet get medical attention. Immediately give two glasses of water if conscious.

Inhalation: If illness occurs, remove patient to fresh air, If breathing is difficult, give oxygen, If breathing has stopped, start artificial respiration, Call physician immediately,

#### **SECTION 5: FIRE-FIGHTING MEASURES**

Product is non-combustible

Flash point:

Autoignition Temperature:

MSDS DATE: 11/27/13

F: 200°F C: 93.3°C F: Not Established C: Not Established

Flammable Limits in Air: (% BY VOLUME)

UPPER: Not applicable LOWER: Not applicable Extinguishing Media:

Use extinguishing media appropriate for surrounding fire

Water Spray	ок
Carbon Dioxide	ОК
Foam	ок
Dry Chemical	ок
Halon	NO
Other	N/A

SPECIAL FIRE FIGHTING PROCEDURES: Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Cool tank container with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product may burn, but will not ignite readily.

#### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

#### Accidental Release Measures:

Review section IV- unusual fire and explosion hazards. Small spills: Wipe or scrape up any material. Wash area thoroughly with detergent and water; ventilate adequately with good fresh air movement at floor level. Large spills: Wear proper protective equipment. Stop spill at source, dike area of spill to keep from spreading and keep out of ground water and streams. Transfer material to metal containers. Absorb remainder with sand clay, earth, floor absorbent, or other material and shovel into containers. Then wash area thoroughly with water and detergent. Ventilate adequately with good fresh air movement at floor level. Do not restart pilot lights or operate electrical devices or other sources of sparks, flames or heat until all vapors (odors) are gone

Personal Precautions: Do not get in eyes. Do not take internally. Avoid skin contact. Prevent prolonged or repeated breathing of vapor or spray mists. Keep unnecessary people away. Floor may be slippery, use care to avoid falling. Remove all sources if ignition. Ventilate the area. Remove with inert absorbent.

#### SECTION 7: HANDLING AND STORAGE

#### Handling and Storage

Precautions to be taken in handling and storing: Store in cool place, out of hot sun and below 100°F. All containers are subject to damage in storage and transit. Damaged containers may start leaking immediately or at a later time. Do not store where vapors may come in contact with flames, sparks or heat.

Other Precautions: Avoid contact with material. Do not eat, drink or smoke when handling

Maximum Storage Temperature: 100°F (38°C), minimum 35°F (2°C). Keep closure tight and containers upright to prevent leakage

Precautionary labeling: KEEP FROM FREEZING".

Product is non-combustible.

#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Precautions:

Use only with adequate ventilation.

Work Hygienic Practices: Avoid contact with skin. Do not get in eyes. Do not take internally. Avoid breathing vapors or spray mists.

Ventilation: Use local exhaust to control vapors.

Respiratory Protection: Approved organic vapor respirator, If vapors or mists are generated.

Eye Protection: Chemical goggles or safety glasses with side shield.

Skin Protection: For repeated or prolonged exposure, neoprene gloves are recommended

Other Protective Equipment: N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES				
Appearance:	Viscous liquid	Solubility in Water:	Total	
Odor:	Sweet odor	Color:	Light Blue	
Boiling Point:	200°F	Viscosity @ 77°F:	N/A	
Evaporation Rate: (Butyl Acetate=1)	Slower	Vapor Density (AIR = 1) @ 68°F:	Heavier	
Vapor Pressure:	<1 mm Hg @ 68 F	Specific Gravity (H2O = 1) @ 68°F:	1.04	
pH	7.0-8.0	Percent Volatile	98+	

#### **SECTION 10: STABILITY AND REACTIVITY**

#### Stability: Stable

Incompatibility: (Material to Avoid): Strong oxidizing agents (E.G. Nitric acid, permanganates, Etc.) Strong Alkalies (E.G. NAOH Ammonia, Etc.), Strong acids (E.G. HCL, Sulfuric, Etc.)

Hazardous Decomposition or By-Products: Not Established

Hazardous Polymerization: Will not occur.

#### SECTION 11: TOXICOLOGICAL INFORMATION

#### Toxicological Information:

Health hazards (chronic): N-Methyl-2-Pyrrolidone: a component of this product was reported to be fetotoxic and to increase the incidence of skeletal abnormalities when administered dermally to rats at a dose of 750 mg/kg during gestation (fund. and appl. tox 2: 73-6, 1982).

#### SECTION 12: ECOLOGICAL INFORMATION

Ecological Information:

No Data Available

# SECTION 13: DISPOSAL CONSIDERATIONS

#### Waste Disposal Method:

Dispose of in accordance with local, state and federal regulations. This product is not considered a hazardous waste under current RCRA regulations.

#### SECTION 14: TRANSPORT INFORMATION

#### U.S. Department of Transportation

Hazard Class: "Non Regulated"

#### **SECTION 15: REGULATORY INFORMATION**

#### U.S. Federal Regulations:

TSCA (TOXIC SUBSTANCE CONTROL ACT): The intentional ingredients of this product are listed.

SARA TITLE III (SECTION 312): Immediate/Health

SARA TITLE III (SECTION 313): This product contains N - Methyl-2- Pyrrolidone which is subject to reporting requirements of section 313 of Title 313 of Title III of The Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986. This product contains a chemical(s) known to the state of California to cause cancer, birth defects, or other reproductive harm.

Pennsylvania Substance List: N - Methyl-2- Pyrrolidone (872-50-4)

New Jersey Right to Know Hazardous Substance List: N - Methyl-2- Pyrrolidone (872-50-4)

#### SECTION 16: OTHER INFORMATION

Judgement of potential hazards of this product is based on information available about individual components listed under section II - Ingredients. Direct testing of mixture has not been done. Flash point has been tested. Information given herein is believed to be accurate and is given in good faith; however, no warranty either expressed or implied is made. It is strongly suggested that users confirm in advance of need that the information is current and applicable to their situations.

To comply with New Jersey DOH Right-To-Know labeling law (NJAC  $8:59-5.1\ \&\ 5.2$ )

CAS. No.:	CHEMICAL INGREDIENTS
872-50-4	N-Methyl-2-Pyrrolidone
627-93-0	Dimethyl Adipate

HMIS HAZARD RATING								
Health 1	Flammability 1	Physical Hazard 0	Personal Protection C					
HAZARD IND	EX: 0=Minimal, 1=Slig	ght, 2=Moderate, 3=Serio	ous, 4=Severe					
	PERSONAL PRO	OTECTION CODE:						
	C = Safety Glasses, (	Gloves, Synthetic Apron						

This company cannot anticipate all conditions of handling and use of this product. Therefore, this company accepts no responsibility for results obtained by the application of this information, or the safety and suitability of our products either alone or in combination with other products. It is the responsibility of the user to provide a safe workplace, using the health and safety information contained herein as a guide. This company will accept no liability for damages or loss incurred from the improper handling and use of this product.

Rainier Commons/Former Rainier Brewery Seattle, Washington

Location (Bldg.	Storm /		Dime	nsions (f	t, in)	Grate			Pipes			Observation	ons	
# / Tank farm/	combined/s	MH / Drain Lid				removable								
Roof)	anitary	Description	L	W	D	Y/N	Condition	In /Outlet	Dia. (in)	Orient.	sediment	paint chips	other	Surrounding area / Comments
CB 2*	Storm	Steel Grate	2.4'	2.1'	3.4'	Υ	Good	Outlet	4"Green PVC	South	~ 0.5"			asphalt pavement; traffic area
CB 3*	Storm	Steel Grate	2'	1.7'	4.7'	Υ	Good	Inlet	4"Green PVC	North				Site Plan ID - BNSF CB 2,
								Inlet	4"Green PVC	South	4-6"			asphalt pavement; traffic area
								Outlet	6 " Cast iron	West				
CB 6*	Storm	Steel Grate	2.2'	1.9'	4.3'	Υ	Good		6" Cast iron	East	2.1'			Tank Farm ID - CB2; with sock installed
									3" Cast iron	South				Concrete pavement and brick tile
														Tank Farm ID - CB6; with sock, with sediment
CB 7*	Storm	Steel Grate	2.2'	2'	4.25'	Υ	Good	Outlet	6" PVC	North	1.35'			on concrete pavement
														Tank Farm ID - CB4; without sock, concrete
CB 8*	Storm	Steel Grate	2.3'	2'	3.05'	Υ	Good	Outlet	6" Cast iron	West	1.15'			pavement, constr. Material adj. to CB
CB 9*	Storm	Steel Grate	2.3'	2'	4.3'	Υ	Good		6" Green PVC	West	3'			Tank Farm ID- CB5; with sock ,
									6" PVC	South				observed bentonite grout in sock
														Sediment on concrete pavement, constr. Mat.
									6" Black plastic	East				and vegetation adj.
														Tank Farm ID - CB1; with sock installed,
														sediment on Brick Tile, constr. Mat.
CB 10*	Storm	Steel Grate	2.3'	2'	2.9'	Υ	Good	Outlet	6" Cast iron	West	10"			surrounding
														Tank Farm ID - CB3; with sock; unable to
CB 11*	Storm	Steel Grate	2.3'	2'		Υ	Good		See comments					access - construction wall supports on grate
CB 18*	Storm	Steel grate	2.2'	1.9'	5'	Υ	Good	Inlet	8" Green PVC	South	0.75'			Asphalt pavement; standing water in CB
								Outlet	8" Green PVC	North				
CB 19*	Storm	Steel grate	2.2'	1.9'	5.2'	Υ	Good	Outlet	8" Green PVC	East	0.3'	present		Asphalt pavement, stall
CB 20*	Storm	Steel Plate	2'	2'	10.9'	Υ	Good	Outlet	12" Cast iron	South	0.4'	present		Roof of Bldg adj. and North of Bldg 19
								Inlet	12" Cast iron	North				
CB 22*	Storm	Steel Grate	2.1'	1.9'	4.32'	N	Good	Inlet	8" Green PVC	South	6"		organics	Lid locked in place
								Outlet	8" Green PVC	North				asphalt pavement, traffic area
	]													
CB 24*	Storm	Steel Grate	2.1'	1.9'	4.1'	Υ	Good	Inlet	4" plastic	West	6"			asphalt pavement, traffic area
								Outlet	8" Green PVC	East				black corrugated plastic pipe
CB 26*	Storm	Steel Grate	2.2'	1.9'	4.5'	Υ	Good	Outlet	8" PVC	West	6"			with sock
								Inlet	4" plastic	Southeast				black corrugated plastic

Rainier Commons/Former Rainier Brewery Seattle, Washington

Location (Bldg.	Storm /		Dime	nsions (ft	t, in)	Grate			Pipes			Observation	ons	
# / Tank farm/ Roof)	combined/s anitary	MH / Drain Lid Description	L	w	D	removable Y/N	Condition	In /Outlet	Dia. (in)	Orient.	sediment	paint chips	other	Surrounding area / Comments
CB 1	Ctorm	Steel Plate w/holes	3'	2.6'	3'	Υ	Good	Inlet	6" PVC	West	~1"			Site Plan ID -BNSF CB 1; concrete vault
CBI	Storm	Steel Plate W/Holes	3	2.0	3	Ť	Good			SW	1			ŕ
								Inlet	4" Cast iron					asphalt pavement; traffic area
CB 4	Storm	Steel Grate	1.25'	1.25'	1.33'	Υ	Good	Outlet Outlet	8" Cast iron 4"Green PVC	North North	~ 1"			Brick fragments in vault asphalt pavement; traffic area
CB 5	Storm	Circular steel Lid,	1.25	1.25	5'	Y	Good	Outlet	8" Cast iron	NE	2-4 "	procent	organics	Lid diameter - 2.3'; Inside diameter- 5';
CB 5	3(0)111	with partial grate	Soo cor	nments	5	r	Good		8" Cast iron	East	Z- <del>4</del>	present	and debris	asphalt pavement;
		with partial grate	See coi	IIIIEIIIS					4" PVC	West			and debits	in parking stall and adj. to sidewalk
									8" Cast iron	South				ili parkilig stali aliu auj. to sidewalk
									8 Cast Holl	300111				near concrete steps, broken concrete
CB 12	Storm	Steel Grate	1'	1'	0.83'	γ	Good	Outlet	3" concrete	North	3.5"		organics	fragments in CB
CB 12	3.01111	Steel Glate	-		0.03	·	Good	Outlet	3 concrete	West end	3.3		organies	Huginents in eb
										of Strip			organics and	
CB 13	Storm	Steel Grate	10.5'	0.65'	1.1'	Υ	Good	Outlet	6"	drain	1-2"	present	debris	Strip drain, asphalt pavement surrounding
CB 14	Storm	Steel Grate	2.1'	0.65'	1'	Y	Good	Outlet	6"cast iron	West	4-5"	present		covered with metal plate and sediment
CB 15	Storm	Steel Grate	2'	0.65'	1'	Υ	Good	Outlet	6" cast iron	West	1-2"	present		Asphalt pavement surrounding
CB 16	Storm	Steel Grate	2.1'	0.7'	0.8'	Υ	Good	Outlet	8" cast iron	North	1/4-1/2"	present		Asphalt pavement surrounding
														in a concrete walkway near entrance to Bldg
CB 17	Storm	Steel Grate	0.8'	0.8'	1.5'	Υ	Good	Outlet	4" PVC	West	trace	present		25
					-									Brass roof drain cover - 6" diameter, screws
CB 21	Storm	Steel Grate	see	commen	its	N	Good	Outlet	6" PVC	Northeast	trace	present		have been stripped
														Paint chips adj. to drain and on roof
CB 23	Storm	Steel Stormceptor	10.4'	2.4'	4.7'	Υ	Good	Outlet	6	North	3"			asphalt pavement, traffic area
														$ m 14^{\prime}$ inch sediment at north end, 3" sed. at south
CB 25	Storm	Steel Grate	88.15'	0.4'	1'	Υ	Good	Outlet	4" PVC	North	1⁄4 - 3 "	present	organics	end;
														strip drain located outside truck bay doors
CB 27	Storm	Steel Stormceptor	8.8'	2.4'	3.75'	Υ	Good				3.75'			Plugged with Sediment
CD Z,	3.01111	2123. 213	0.0	۷٠٠	5.75	•	3000				3.73			i iappea titti seaiment

Rainier Commons/Former Rainier Brewery Seattle, Washington

Location (Bldg.	Storm /		Dime	nsions (ft	t, in)	Grate			Pipes			Observation	ons	
# / Tank farm/ Roof)	combined/s anitary	MH / Drain Lid  Description	L	w	D	removable Y/N	Condition	In /Outlet	Dia. (in)	Orient.	sediment	paint chips	other	Surrounding area / Comments
MH 1	Sanitary	"Sewer" MH Lid	See cor	mments	2'	Y	Good	Inlet Outlet	6" Cast iron 4" Terra Cotta	NE South			plugged w/ bio solids &Toilet products	MH Lid diameter- 1.85' / inside diameter-3'; asphalt pavement; in parking stall
MH 2	Combined	"Sewer" MH Lid	4.5'	4.5'	5'	Υ	Good	Inlet	8" Terra Cotta	North	trace			Lid diameter - 2.25', Site Plan ID - CB14
								Inlet	8" Terra Cotta	North				concrete and brick constr.
								Inlet	12" Cast iron	East				traffic area, asphalt pavement
								Outlet	12" Concrete	West				parking stall
MH 3	Sanitary	"Sewer" MH Lid	3'	2.5'	5'	Υ	Good	Inlet	12" Concrete	East	trace			Lid diameter - 2.25'
								Outlet	12" Concrete	SW				asphalt pavement; traffic area
MH 4	Sanitary	MH Lid	5'	5'	5.2'	Υ	Good	Inlet	12"Cast iron	North/NE	trace			Lid Diameter - 2.3'
								Outlet	12"Cast iron	South/SW				4" water line crosses above
MH 5	Combined	"Sewer" MH Lid			5.35'	Υ	Good	Inlet	4" Cast iron	NE	trace			Lid diameter- 1.8';
								Inlet	12" Concrete	North				2.5' diameter brick and mortar vault
								Outlet	12" Concrete	South				traffic area, asphalt pavement
MH 6	Combined	Steel MH lid	5.3'	5'	8.3'	Υ	Good	Inlet	12"	East	trace	present		Steel Lid-1.85' diameter with handle
		with handle						Inlet	12"	SE				Ladder present
								Inlet	8" cast iron	East				wooden lagging and concrete
								Inlet	8" cast iron	East				construction
								Inlet	6" PVC	South				
								Inlet	4" PVC	South				
								Outlet	18" concrete	West				
MH 7	Storm	Circ. MH Lid	see cor	mments •	3.05'	Υ	Good	Inlet	6" cast iron	East	3"	present		MH lid-1.5' diameter;
								Inlet	4" Terra Cotta	SW				covered with metal plate
MH 8	Storm	Steel MH Lid	3'	3'	5'	Υ	Good		4" cast iron	South	1-2"	present		Circ. concrete vault casing
									6" cast iron	South				MH Lid - 2' diameter
									6"cast iron	South				Asphalt pavement surrounding

6" cast iron

6" Cast iron

4" Cast iron

12" Cast iron

4" Cast Iron

4" Cast iron

4" Cast iron

6" Cast iron

West

North

West

South

South

North

East

6"

trace

present

present

Storm

Storm

Steel Lid

Steel Lid

4.5'

3'

see comments 13.75'

Υ

Good

Good

Inlet

Inlet

MH 9

MH 10

Steel lid - 2.1' diameter

Ladder present

12" Cast iron - capped

paint chips and debris

near MH lid

Inside bldg. 20; Steel lid-2.15' diameter, Concrete casing- 2.5 ' in diameter

paint chips at top of casing

Rainier Commons/Former Rainier Brewery Seattle, Washington

Location (Bldg.	Storm /		Dime	nsions (ft	:, in)	Grate			Pipes			Observation	ons	
# / Tank farm/	combined/s	MH / Drain Lid				removable								1
Roof)	anitary	Description	L	W	D	Y/N	Condition	In /Outlet	Dia. (in)	Orient.	sediment	paint chips	other	Surrounding area / Comments
														6 in. diameter cast iron drain. Surrounded by
D1		circ. cast iron drain	see	commen	its	У	good							organic growth and sediment.
														7.5" diameter cast iron drain. Partially covered
D2		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				in organic growth and sediment.
														7.5" diameter cast iron drain. Partially covered
D3		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				in organic growth and sediment.
														7.5" diameter cast iron drain. Partially covered
D4		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				in organic growth and sediment.
														7.5" diameter cast iron drain. Partially covered
D5		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				in organic growth and sediment.
														7.5" diameter cast iron drain. Inlet plugged
D6		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				with sediment and debris.
														7.5" diamter cast iron drain. Partially covered
D7		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				in organic growth and sediment.
														7.5" diameter cast iron drain. Partially covered
D8		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				in organic growth and sediment.
														7.5" diameter cast iron drain. Partially covered
D9		circ. cast iron drain	see	commen	its	У	good	outlet	1.75"	down				in organic growth and sediment.
														6 in. diameter cast iron drain. Surrounded by
D10		circ. cast iron drain	see	commen	its	У	good							organic growth and sediment.

MH - Manhole (access)

CB - Catch Basin (drainage)

D - Drain (drainage)

\* - should be compatible with standard sized catch basin inserts

Roof Drain Summary
Rainier Commons/Former Rainier Brewery Seattle, Washington

	Influent downspout sources (sources that flow	Effluent runoff sources (sources that flow	
Building #	onto roof of building)	from the roof)	Comments
3	DS1 (roof 4)	RD1, RD2	RDs appear to go into concrete slab into system
2	none	RD5, RD4, RD3	RD3 and RD4 appear to drain onto grass, RD5 drains into system
			RD6-12 appear to collect and drain onto BLDG22 through DS4, old RD
25	DS2 and DS3 (from stairwell section of bldg 25)	RD6, RD7, RD8, RD9, RD10, RD11, RD12	opening on S side of roof 2" above roof floor
			DS6, DS7 drain onto BLDG6, DS8 drains onto BLDG7, RD13 and RD14
22	DS4, DS5	DS6, DS7, DS8, RD13, RD14	drain down to the ground and system
21 high point	DS9, DS11, RD16 and RD17 through DS10	RD15	RD15 drains down to ground into system
5A	DS12 (roof 5)	DS14	DS14 drains onto BLDG4
4	DS14	DS1	DS runs onto roof of building 3
6	DS6, DS7, DS15, DS16	RD19, RD20	RD19 and RD20 appear to collect and flow through pipes down to roof of building 9 and enter there. Breaks in the wall connect building 6 and 7. RD27 and RD28 run down the S.side of building 7 and enter into building
7	DS8	DD20 DD20	
/	D28	RD29, RD28	all roof drains enter into building 9, pipes from roof of building 6 also enter
9	DS17	RD21, RD22, RD23, RD24	building 9
8	0317	DS18. DS19	Flow onto lower part of building 8 (see plan drawing)
8 Low	DS18, DS19	RD25, RD26	roof drains enter building 8 low
O LOW	0316, 0319	RD27, RD28, RD29, RD30, RD31, RD32,	RD 27 - 31 enter building 18 while RD32 and RD33 appear to enter
18		RD33	combined system on ground
15		RD34, RD35	RD34, RD35 appear to enter combined system on ground
14		RD36, RD37, RD38, RD39	RD36-39 enter into building 14
17		ND30, ND37, ND30, ND33	RD 41 enters building 13, RD40 and RD42 enter drains on the side of the
13		RD40, RD41, RD42	building
23		RD45	RD45 runs on side of building and drains into system
20		100	RD44 runs on side of building and drains into system, hole in wall on roof
12		RD44	of building 12 appears to be location of old RD
11		RD43	RD43 runs on side of building and drains into system
10		RD46	RD46 runs on side of building and drains into system
5		DS12, DS15	runoff from building 5 flows onto building 5a and building 6

**Bolded** items drain into storm or combined sewer system

RD - Roof Drains, sources that go into storm or combined sewer DS - Down Spouts, drainage from one roof down to another roof

RTECS: Table 1 CAS: Table 1 mixture:  $C_{12}H_{10-x}CI_x$ MW: ca. 258 (42% CI; C<sub>12</sub>H<sub>7</sub>Cl<sub>3</sub>);

[where x = 1 to 10] ca. 326 (54% CI; C<sub>12</sub>H<sub>5</sub>CI<sub>5</sub>)

METHOD: 5503, Issue 2 **EVALUATION: PARTIAL** Issue 1: 15 February 1984

Revision #1: 15 August 1987 Issue 2: 15 August 1994

**OSHA:** 1 mg/m<sup>3</sup> (42% CI); PROPERTIES: 42% CI: BP 325 to 366 °C; MP -19 °C;

d 1.38 g/mL @ 25 °C;

VP 0.01 Pa (8 x 10<sup>-5</sup> mm Hg;

1 mg/m<sup>3</sup>) @ 20 °C

54% CI: BP 365 to 390 °C; MP 10 °C;

d 1.54 g/mL @ 25 °C; VP 0.0004 Pa (3 x 10<sup>-6</sup> mm Hg;

0.05 mg/m<sup>3</sup>) @ 20 °C

SYNONYMS: PCB; 1,1'-biphenyl chloro; chlorodiphenyl, 42% CI (Aroclor 1242); and 54% CI (Aroclor 1254)

**SAMPLING MEASUREMENT** 

SAMPLER: FILTER + SOLID SORBENT TECHNIQUE: GAS CHROMATOGRAPHY, ECD (63Ni)

(13-mm glass fiber + Florisil, 100 mg/50 mg) ANALYTE: polychlorobiphenyls

FLOW RATE: 0.05 to 0.2 L/min or less **DESORPTION:** filter + front section, 5 mL hexane; back

section, 2 mL hexane

4-μL with 1-μL backflush

-MAX: 50 I INJECTION

not studied

1 L @ 0.5 mg/m<sup>3</sup>

0.5 mg/m<sup>3</sup> (54% CI)

**ACGIH:** 1 mg/m<sup>3</sup> (42% CI) (skin)

**NIOSH:** 0.001 mg/m<sup>3</sup>/10 h (carcinogen)

0.5 mg/m3 (54% CI) (skin)

SHIPMENT: transfer filters to glass vials after sampling

SAMPLE

**RANGE STUDIED:** 

VOL-MIN:

STABILITY: unknown for filters;

2 months for Florisil tubes [1]

**ACCURACY** 

BLANKS: 2 to 10 field blanks per set CARRIER GAS: N<sub>2</sub>, 40 mL/min

TEMPERATURE-INJECTION:

-DETECTOR:

-COLUMN:

VOLUME:

COLUMN: glass, 1.8 m x 2-mm ID, 1.5% OV-17/1.95%

QF-1 on 80/100 mesh Chromosorb WHP

250 to 300 °C

300 to 325 °C

180 °C

CALIBRATION: standard PCB mixture in hexane

RANGE: 0.4 to 4 µg per sample [2] none identified

OVERALL PRECISION (\$\hat{S}\_{rT}\$): not evaluated ESTIMATED LOD: 0.03 µg per sample [2]

**ACCURACY:** not determined **PRECISION (Š,):** 0.044 [1]

APPLICABILITY: The working range is 0.01 to 10 mg/m3 for a 40-L air sample [1]. With modifications, surface wipe samples may be analyzed [3,4].

INTERFERENCES: Chlorinated pesticides, such as DDT and DDE, may interfere with quantification of PCB. Sulfur-containing compounds in petroleum products also interfere [5].

OTHER METHODS: This method revises methods S120 [6] and P&CAM 244 [1]. Methods S121 [7] and P&CAM 253 [8] for PCB have not been revised.

#### **REAGENTS:**

- 1. Hexane, pesticide quality.
- Florisil, 30/48 mesh sieved from 30/60 mesh. After sieving, dry at 105 °C for 45 min. Mix the cooled Florisil with 3% (w/w) distilled water.
- 3. Nitrogen, purified.
- 4. Stock standard solution of the PCB in methanol or isooctane (commercially available).\*
  - \* See SPECIAL PRECAUTIONS.

#### **EQUIPMENT:**

- 1. Sampler: 13-mm glass fiber filter without binders in a Swinnex cassette (Cat. No. SX 0001300, Millipore Corp.) followed by a glass tube, 7 cm long, 6-mm OD, 4-mm ID containing two sections of 30/48 mesh deactivated Florisil. The front section is preceded by glass wool and contains 100 mg and the backup section contains 50 mg; urethane foam between sections and behind the backup section. (SKC 226-39, Supelco ORBO-60, or equivalent) Join the cassette and Florisil tube with PVC tubing, 3/8" L x 9/32" OD x 5/32" ID, on the outlet of the cassette and with another piece of PVC tubing, 3/4" L x 5/16" OD x 3/16" ID, complete the union.
- 2. Personal sampling pump, 0.05 to 0.2 L/min, with flexible connecting tubing.
- 3. Tweezers.
- 4. Vials, glass, 4- and 7-mL, with aluminum or PTFE-lined caps
- 5. Gas chromatograph, electron capture detection (<sup>63</sup>Ni), integrator and column (page 5503-1).
- 6. Volumetric flasks, 10-mL and other convenient sizes for preparing standards.
- 7. Syringe, 10-µL.

**SPECIAL PRECAUTIONS:** Avoid prolonged or repeated contact of skin with PCB and prolonged or repeated breathing of the vapor [9-11].

#### SAMPLING:

- 1. Calibrate each personal sampling pump with a representative sampler in line.
- 2. Break the ends of the Florisil tube immediately before sampling. Connect Florisil tube to Swinnex cassette and attach sampler to personal sampling pump with flexible tubing.
- 3. Sample at an accurately known flow rate between 0.05 and 0.2 L/min for a total sample size of 1 to 50 L.
  - NOTE: At low PCB concentrations, the sampler was found to be efficient when operated at flow rates up to 1 L/min, for 24 hours [4]. Under these conditions, the limit of detection was  $0.02 \mu g/m^3$ .
- 4. Transfer the glass fiber filters to 7-mL vials. Cap the Florisil tubes with plastic (not rubber) caps and pack securely for shipment.

## **SAMPLE PREPARATION:**

- 5. Place the glass wool and 100-mg Florisil bed in the same 7-mL vial in which the filter was stored. Add 5.0 mL hexane.
- 6. In a 4-mL vial, place the 50-mg Florisil bed including the two urethane plugs. Add 2.0 mL
- 7. Allow to stand 20 min with occasional agitation.

#### **CALIBRATION AND QUALITY CONTROL:**

- 8. Calibrate daily with at least six working standards over the range 10 to 500 ng/mL PCB.
  - Add known amounts of stock standard solution to hexane in 10-mL volumetric flasks and dilute to the mark.
  - b. Analyze together with samples and blanks (steps 11 and 12).
  - c. Prepare calibration graph (sum of areas of selected peaks vs. ng PCB per sample).
- 9. Determine desorption efficiency (DE) at least once for each lot of glass fiber filters and Florisil used for sampling in the calibration range (step 8). Prepare three tubes at each of five levels plus three media blanks.
  - a. Remove and discard back sorbent section of a media blank Florisil tube.
  - b. Inject known amounts of stock standard solution directly onto front sorbent section and onto a media blank filter with a microliter syringe.
  - c. Cap the tube. Allow to stand overnight.
  - d. Desorb (steps 5 through 7) and analyze together with working standards (steps 11 and 12).
  - e. Prepare a graph of DE vs. µg PCB recovered.
- 10. Analyze three quality control blind spikes and three analyst spikes to ensure that the calibration graph and DE graph are in control.

#### **MEASUREMENT:**

- 11. Set gas chromatograph according to manufacturer's recommendations and to conditions given on page 5503-1. Inject sample aliquot manually using solvent flush technique or with autosampler.
  - NOTE 1: Where individual identification of PCB is needed, a procedure using a capillary column may be used [12].
  - NOTE 2: If peak area is above the linear range of the working standards, dilute with hexane, reanalyze and apply the appropriate dilution factor in calculations.
- 12. Sum the areas for five or more selected peaks.

# **CALCULATIONS:**

- 13. Determine the mass, μg (corrected for DE) of PCB found on the glass fiber filter (W) and in the Florisil front (W<sub>f</sub>) and back (W<sub>b</sub>) sorbent sections, and in the average media blank filter (B) and front (B<sub>f</sub>) and back (B<sub>b</sub>) sorbent sections.
  - NOTE: If  $W_b > W_t/10$ , report breakthrough and possible sample loss.
- 14. Calculate concentration, C, of PCB in the air volume sampled, V (L):

$$C = \frac{(W + W_f + W_b - B - B_f - B_b)}{V}, mg/m^3.$$

#### **EVALUATION OF METHOD:**

This method uses 13-mm glass fiber filters which have not been evaluated for collecting PCB. In Method S120, however, Aroclor 1242 was completely recovered from 37-mm glass fiber filters using 15 mL isooctane [8,13,14]. With 5 mL of hexane, Aroclor 1016 was also completely recovered from 100-mg Florisil beds after one-day storage [1]. Thus, with no adsorption effect likely on glass fiber filters for PCB, 5 mL hexane should be adequate to completely extract PCB from combined filters and front sorbent sections. Sample stability on glass fiber filters has not been investigated. Breakthrough volume was >48 L for the Florisil tube at 75% RH in an atmosphere containing 10 mg/m <sup>3</sup> Aroclor 1016 [1].

#### **REFERENCES:**

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- [5] Hofstader, R. A., C. A. Bache, and D. J. Lisk. Bull, Environ. Contam. Toxicol., 11, 136 (1974).
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- [12] Dunker, J. C. and M. T. J. Hillebrand. Characterization of PCB Components in Clophen Formulations by Capillary GC-MS and GC-ECD Techniques, <u>Environ. Sci. Technol.</u>, <u>17</u> (8), 449-456 (1983).
- [13] Backup Data Report for S120, prepared under NIOSH Contract 210-76-0123, available as "Ten NIOSH Analytical Methods, Set 2," Order No. Pb 271-464 from NTIS, Springfield, VA 22161.
- [14] NIOSH Research Report-Development and Validation of Methods for Sampling and Analysis of Workplace Toxic Substances, U.S. Department of Health and Human Services, Publ. (NIOSH) 80-133 (1980).
- [15] Hutzinger, O., S. Safe, and V. Zitko. <u>The Chemistry of PCBs</u>, CRC Press, Inc., Cleveland, OH (1974).

# **METHOD REVISED BY:**

James E. Arnold, NIOSH/DPSE; S120 originally validated under NIOSH Contract 210-76-0123.

#### Table 1. General Information.

Compound	CAS	RTECS
Polychlorinated Biphenyls Chlorobiphenyl Aroclor 1016 (41% CI) Aroclor 1242 (42% CI)	1336-36-3 27323-18-8 12674-11-2 53469-21-9	TQ1350000 DV2063000 TQ1351000 TQ1356000
Aroclor 1254 (54% CI)	11097-69-1	TQ1360000

Table 2. Composition of some Aroclors [15].

Major Components	Aroclor 1016	Aroclor 1242	Aroclor 1254
Biphenyl	0.1%	<0.1%	<0.1%
Monochlorobiphenyls	1	1	<0.1
Dichlorobiphenyls	20	16	0.5
Trichlorobiphenyls	57	49	1
Tetrachlorobiphenyls	21	25	21
Pentachlorobiphenyls	1	8	48
Hexachlorobiphenyls	<0.1	1	23
Heptachlorobiphenyls	none detected	<0.1	6
Octachlorobiphenyls	none detected	none detected	none detected



# **NVL's**

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# HEALTH AND SAFETY PLAN (HASP)

for the

# Rainier Common's Exterior Paint Removal Project

NVL Laboratories 4708 Aurora Ave North Seattle WA 98103

**NVL Project #: 2012-494** 

Version Date: May 26, 2014

The HASP is to be reviewed and updated by the CIH minimally after completion of an IPWP (Individual Phase Work Plan) and more frequently if the work changes. Updates are done as new tasks are implemented. The latest version date is posted at the NVL construction site office.

Phone: 206 547.0100 | Fax: 206 634.1936 | Toll Free: 1.888.NVL.LABS (685.5227) 4708 Aurora Avenue North | Seattle, WA 98103-6516



# **HEALTH AND SAFETY PLAN APPROVAL**

NVL Laboratories (NVL) developed this Health and Safety Plan (HASP) for its use. NVL claims no responsibility for its use by others. This plan covers activities with the potential for exposure to hazardous materials during activities associated with the project.

The Contractor at the Site (CGI) has a HASP in operation at the site. The intent is to follow the procedures documented in CGI's HASP with NVL's HASP providing specifics and clarity for NVL operations.

With this said, NVL's HASP is written for the specific site conditions, purposes, dates, and personnel specified and must be amended as described in the document, particularly if conditions change. It is recognized that this is a living document and will be continuously improved and updated during the course of the project. At a minimum, this HASP is to be reviewed and updated by the CIH minimally after completion of an IPWP (Individual Phase Work Plan) and more frequently if the work changes. Updates are done as new task are implemented. As a result, even though initially approved as signed below, it is critical that the latest version of the HASP is used. The latest version date is posted at the NVL construction site office.

The HASP is not intended to address normal safety practices on the construction site or NVL's standard operating procedures that are covered in the Washington State Department of Labor and Industries Safety Standards for Construction Work (WAC 296-155).

Health and Safety Plan

NVL Project #: 2012-494

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PROJECT CONTACTS AND EMERGENCY INFORMATION							
SITE LOCATION:	3100 Airport Way South Seattle, WA 98134						
NVL JOBSITE ADDRESS:	3100 Airport Way South Seattle, WA 98134						
NVL LABORATORIES, INC. (NVL) KEY PERSONNEL HEALTH AND SAFETY • SITE SAFETY OFFICER	NVL Laboratories, Inc. (NVL) 4708 Aurora Ave. N. Seattle WA 98103 Office: Phone: (206) 547-0100 Fax: (206) 634-1936						
	Munaf Khan Project Manager/Laboratory Directory/President CELL: (b) (6) E-mail: Munaf.K@nvllabs.com  Dave Leonard MSPH CIH						
	Certified Industrial Hygienist (CIH) CELL: (b) (6) E-mail: catalystnw@comcast.net						
	Marcus Gladden Site Safety Officer / Industrial Hygienist CELL: (b) (6) E-mail: Marcus.G@nvllabs.com						
Project Site KEY PERSONNEL	Vered Mizrahi Project Manager: Rainier Commons 918 S Horton Street, Suite 1018 Seattle WA 98134 CELL: (b) (6) Office: 206-447-0263 E-mail: vered@arieldevelopment.com  Mark Marcell, President Contractor: CGI Office: 425-487-2618 Cell:(b) (6)						
NEAREST HOSPITAL:	E-mail: markm@cgius.net  Harborview Medical Center 325 Ninth Avenue Seattle, WA 98104-2499 General Information: 206-744-3300 Emergency Department: 206-744-3074 Urgent Care, 206-744-5867						
EMERGENCY FIRE AND AMBULANCE:	Call 911						



EMERGENCY PROCEDURES							
Emergency Phone Number	Call 911 for POLICE / FIRE / MEDICAL AID						
Jobsite Address:	3100 Airport Way South Seattle, WA 98134						
NEAREST HOSPITAL:	Harborview Medical Center						
(Map with directions on next page)	325 Ninth Avenue Seattle, WA 98104-2499 General Information: 206-744-3300 Emergency Department: 206-744-3074 Urgent Care, 206-744-5867						
FIRST AID KIT LOCATIONS	NVL Construction Site Office						
SITE EVACUATION	In the event of an emergency situation such as fire, explosion, or significant release of toxic gases, project personnel in the field will be directed to evacuate the area. In the event of an emergency, personnel will gather at their pre-determined meeting point for a head count. The meeting point is in front of Tulley's Coffee (West Side). This location (or any change) will be communicated to the work crew(s) during the safety briefing prior to commencement of work activities and weekly thereafter.						

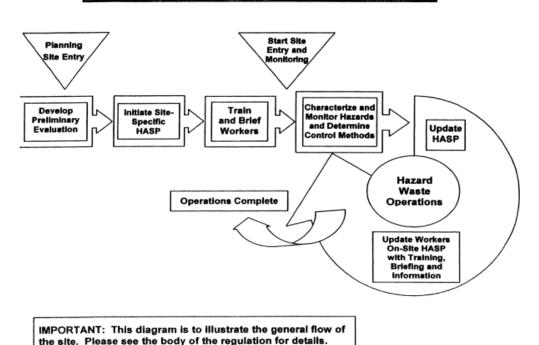


# 1.0 INTRODUCTION

This site specific Health and Safety Plan (HASP) provides a general description of the levels of personal protection and safe operating guidelines expected of each NVL employee associated with the work being conducted under the control of Rainier Commons during the Exterior Paint Removal project.

It is recognized that this is a living document and will be continuously improved and updated during the course of the project. As described and shown in the following diagram from WAC 296-843-100, characterization and analysis of site hazards is an ongoing process:

# Site Evaluation Health & Safety Plan (HASP) Development Cycle



In order to do this, HASP supplements will be generated as necessary to address any additional activities or changes in site conditions which may occur during field operations. Once generated, each Supplement will be reviewed and acknowledged by NVL, communicated to field personnel prior to the start of applicable work activities and appended to this HASP.

At a minimum, this HASP is to be reviewed and updated by the CIH minimally after completion of an IPWP (Individual Phase Work Plan) and more frequently if the work changes. Updates are done as new task are implemented. As a result, even though initially

Health and Safety Plan

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approved as signed below, it is critical that the latest version of the HASP is used. The latest version date is posted at the NVL construction site office.

## 1.1 GENERAL

The provisions of this HASP are mandatory for all NVL personnel engaged in fieldwork associated with the Rainier Commons Exterior Paint Removal project. A copy of this HASP, any applicable HASP Supplements and applicable NVL safety documents shall be maintained on site and available for review at all times. Record keeping will be maintained in accordance with this HASP.

In the event of a conflict between this HASP and federal, state, and local regulations, workers shall follow the most stringent/protective requirements.

# 1.2 SCOPE OF HEALTH AND SAFETY PLAN

This HASP covers specific site activities that will be conducted by NVL personnel.

# **Site Investigation and Monitoring**

Activities include, but are not limited to: the industrial hygiene and safety sampling and testing for air contaminants and material testing by NVL personnel in support of HASP activities. Other site investigation activities not specifically listed here will be covered by Health and Safety Supplements, which will be appended to this HASP as needed.

Other activities not specifically listed here will be covered by Health and Safety Supplements, which will be appended to this HASP as needed.

# 1.3 PURPOSE OF THE SITE SPECIFIC HASP

The information in this HASP has been developed in accordance with applicable standards and the project specification and is, to the extent possible, based on information available to date and is tailored to be site specific. The HASP is a living document and is to be constantly updated as conditions and knowledge of the work activities develop.

- 1. This site specific *Health and Safety Plan* (HASP) is required in the specification for the project to identify, evaluate and control safety and health hazards.
- Also, as part of this project, NVL provides support to Rainier Commons with health and safety services, including an experienced Certified Industrial Hygienist to perform the duties of identifying and taking immediate actions to correct hazards found during the course of the project.

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3. NVL's duties per this HASP is to assess safety hazards, conduct exposure monitoring and interpret laboratory data to provide the professional industrial hygiene, safety and laboratory services needed to support operations and assure compliance with Environmental and Health and Safety regulations

# 1.4 HASP REQUIREMENTS

The HASP includes the following requirements:

- Communication the contents of this HASP to all NVL personnel which includes at a minimum an initial briefing regarding health and safety procedures. During the briefing, employees shall be instructed on the following topics:
  - The nature of the hazardous materials at the site and the controls in place
  - The atmospheric monitoring program and equipment
  - Action levels and requirements, if exceeded
- **Elimination of unsafe conditions**, i.e. efforts to identify conditions that can contribute to an incident and to remove exposure to these conditions.
- Scheduled formal review and update of the HASP. To ensure this HASP maintains compliance with regulatory and specification requirements, and is serving its purpose to protect people and the environment, this HASP is to be reviewed and updated by the CIH minimally after completion of an IPWP (Individual Phase Work Plan) and more frequently if the work changes. Updates are done as new task are implemented. As a result, even though initially approved as signed below, it is critical that the latest version of the HASP is used. The latest version date is posted at the NVL construction site office.

# 2.0 PROJECT HEALTH AND SAFETY ORGANIZATION

# PROJECT MANAGER

The Project Manager (PM) has overall management authority and responsibility for all NVL site operations, including safety. The PM will provide the site supervisor and NVL with the necessary work plans, staff and budgetary resources which are appropriate to meet the safety needs of the project operations.

# PROJECT SITE SUPERVISOR

The Site Supervisor (SS) has the overall responsibility and authority to direct NVL work operations at the job site according to the provided work plans, this HASP and applicable THAs (Task Hazard Analysis forms). This includes:

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- Discussing deviations from the work plan with the PM.
- Discussing safety issues with the PM and field personnel.
- Assisting with the development and implementation of corrective actions for site safety deficiencies.
- Assist the with the implementation of this HASP and ensuring compliance.
- Assist the with inspections of the site for compliance with this HASP.

At this project, the competent person for NVL is the SS who the Department of Labor and Industries (L&I) regulations define a "competent person" as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

# **NVL's INDUSTRIAL HYGIENE AND SAFETY SUPPORT**

For this project NVL Laboratories (NVL) provides the professional industrial hygiene, safety and laboratory services needed to assess safety hazards, conduct exposure monitoring and interpret laboratory data to support operations and assure compliance with Environmental and Health and Safety regulations.

## **EMPLOYEES**

# **Employee Responsibilities**

Responsibilities of employees associated with this project include, but are not limited to:

- Understanding and abiding by the policies and procedures specified in the HASP and other applicable safety policies, and clarifying those areas where understanding is incomplete.
- Providing feedback to the NVL relating to omissions and modifications in the HASP or other safety policies.
- Notifying NVL of unsafe conditions and acts.

# **Employee Authority**

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The health and safety authority of each employee assigned to the site includes the following:

- The right to refuse to work and/or stop work authority when the employee feels that the work is unsafe, or where specified safety precautions are not adequate or fully understood.
- The right to refuse to work on any site or operation where the safety procedures specified in this HASP or other safety policies are not being followed.
- The right to contact NVL at any time to discuss potential concerns.

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# 3.0 SITE HAZARDS

The project is to remove exterior paint that is known to contain PCBs. The methods to be used by CGI to remove the paint include abrasive blasting and chemical removal.

Other hazards also exist at the site and are categorized as construction hazards.

# 4.0 SITE CONTROL

# **GENERAL**

The purpose of site control is to minimize potential contamination of workers and protect the adjacent area from the site hazards.

Controlled work areas will be established at each work location, and if required, will be established directly prior to the work being conducted. Diagrams designating specific controlled work areas will be provided by CGI, posted in the support area and discussed during the daily safety meetings. If the site layout changes, the new areas and their potential hazards will be discussed immediately after the changes are made.

# 5.0 SAFE WORK PRACTICES

# STOP WORK AUTHORITY

# Project Manager and Site Safety Officer

The PM and SS have the ultimate responsibility and authority to stop work if they determine if workplace conditions present an uncontrolled risk of injury or illness to employees. Resumption of safe operations is the primary objective AND operations shall not resume until NVL has concurred that workplace conditions meet acceptable safety standards.

# Employees

All employees have the right and duty to stop work when conditions are unsafe and to assist in correcting these conditions.

# 6.0 TRAINING

HAZWOPPER training is required for workers at the site.

The CIH will work with PM to identify if additional training is required. Topics for training may include:

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# HASP training

Instruction on the contents of applicable portions of this HASP and any supplemental health and safety information developed for the tasks to be performed, including:

- Information about the potential routes of exposure, protective clothing, precautionary measures, and symptoms or signs of chemical exposure and heat stress.
- Awareness of task-specific physical hazards and other hazards that may be encountered during site work. This includes any specific required training for health and safety.
- Awareness of emergency and evacuation procedures.
- Personal Protective Equipment (PPE)
- Respiratory Protection
- Hazard Communication Program

# 7.0 PERSONAL PROTECTIVE EQUIPMENT

NVL's existing Personal Protective Equipment (PPE) procedures/program will be followed at this site, which includes training in its use.

Priority for control of site hazards will be eliminated or reduced to the greatest extent possible first through administrative and/or engineering controls along with safe work practices prior to relying on personal protective equipment. The goal, if PPE is used, is that it is as a back-up if the other controls are ineffective.

General Information about Personal Protective Equipment								
Туре	Material	Information						
Safety Vest	High Visibility	Must be visible from all sides						
Boots								
Safety Glasses		ANSI Approved						
Hearing Protection	Ear Plugs and/or Muffs	When in noisy environments						
Gloves	Any	When working with sharp objects or powered equipment						
Protective chemical gloves	Inner: Best Safety N-DEX Outer: Heavy duty Nitrile, PVC, Neoprene, and Viton	When in contact with potentially contaminated materials						

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Protective Chemical Overalls	Tyvek	When clothing may contact
		contaminated materials
Protective Chemical Boots	Rubber, Neoprene, PVC	If needed
Level C Respiratory	Full Face Respirator If in containment	
Protection		
Face shield	Debris/splash shield	If needed
Cold weather gear	Hard hat liner, hand warmers, and insulated gloves	If needed

# 8.0 GENERAL SAFETY AT THE SITE

# Smoking, Eating, or Drinking

Smoking, eating and drinking will not be permitted inside any controlled work area at any time. Field workers will first wash hands and face immediately after leaving controlled work areas (and always prior to eating or drinking).

# **Personal Hygiene**

The following personal hygiene requirements will be observed:

- Water Supply: A water supply meeting the following requirements will be utilized:
- Potable Water An adequate supply of potable water will be available for field personnel consumption. Potable water can be provided in the form of water bottles, canteens, water coolers, or drinking fountains. Where drinking fountains are not available, individual-use cups will be provided as well as adequate disposal containers. Potable water containers will be properly identified in order to distinguish them from non-potable water sources.
- Non-Potable Water Non-potable water may be used for hand washing and cleaning activities. No potable water will not be used for drinking purposes. All containers of non-potable water will be marked with a label stating:

Non-Potable Water Not Intended for Drinking Water Consumption

# **Heat and Cold Stress**

Heat and cold stress may vary based upon work activities, PPE/clothing selection, and weather conditions. To reduce the potential of developing heat/cold stress, NVL will be aware of the signs and symptoms of heat/cold stress and watch fellow employees for signs of heat/cold stress.

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# 9.0 RECORDKEEPING

Records shall established and maintained of all necessary and prudent monitoring activities as described in the appendices.

Copies of air sampling results will be maintained in the project files.

# Addendum Item # 31 Roof Drain Protection Plan Phase 1

The purpose of this document is to clarify the protection plan for the roof drain in building 13, 10 and 11 to Exhibit 10 in Phase 1 IPWP".

RD#	Location	Action/Protection	Notes
RD40	South East corner on the out side wall	Drain will be reroute so it drains to courtyard. Filter at the outside end of the corrugated pipe	Before blasting work starts
RD41	South West of Corner roof deck	Filter fabric	Before blasting work starts
RD42	North West corner on the out side wall	Drain will be reroute so it drains to parking lot. Filter will be placed on the outside end of the corrugated pipe	Before blasting work starts

<sup>-</sup> Building 10 and 11 roof drain (RD 43, RD45 and RD 46) will protect with filter and will be out side of the containment.

